



DIGI XBEE RR DEVELOPMENT KIT

The Digi XBee RR Development Kit provides OEMs with a simple, quick way to integrate wireless connectivity and functionality into their devices

Digi XBee® RR wireless modules accelerate time-to-market for designers, OEMs and solution providers by quickly enabling wireless connectivity and easy-to-add functionality. Building on industry-leading technology, pre-certified Digi XBee RR wireless modules offer the flexibility to switch between multiple frequencies and wireless protocols as needed, including Zigbee, 802.15.4, DigiMesh® and BLE (slave only).

The Digi XBee RR Development Kit helps developers integrate wireless connectivity into applications using Digi XBee RR embedded modules. Starting with simple examples, we provide step-by-step guidance as you assemble the kit components to create reliable, low-power wireless communication connectivity for OEM devices.

This kit is designed for anyone interested in getting started in the world of embedded wireless connectivity. Hardware and software engineers, corporate technologists, educators and students can quickly learn more about wireless integration using the hands-on examples.

A versatile addition to the expanding Digi XBee Ecosystem of wireless modules, adapters and software, the Digi XBee RR Series offers a complete solution engineered to accelerate development and deployment.

Digi XBee RR offers a fully interoperable ecosystem covering all vertical markets including building automation, smart energy, digital health, intelligent lighting, and others. From edge computing to future migration, Digi XBee RR wireless modules offer size, weight, power and performance advantages in a micro form factor ideal for scalable device connectivity, security and flexibility.

Your kit includes:

- ✓ 3 Digi XBee Grove Development Boards
- ✓ 3 Digi XBee RR SMT modules, programmable to Zigbee, 802.15.4, DigiMesh and BLE (slave only)
- ✓ 3 Micro-USB cables
- ✓ 3 antennas
- ✓ Comprehensive web and video-based instruction
- ✓ Digi XBee Mobile App, Digi XCTU®, and Digi XBee Tools

PART NUMBER	DESCRIPTION
XKRR-Z8S-WZM	Digi XBee RR Development Kit

Digi TrustFence® offers built-in security, identity and data privacy, and features comprehensive security controls to protect against new and evolving cyber threats.

The Digi XBee Mobile App and Digi XCTU® simplify local setup, configuration, testing and adding or changing functionality. OEMs can future-proof designs using Digi XBee RR, along with the full suite of standard Digi XBee API frames and AT commands, and the Digi XCTU configuration and testing tool.

SPECIFICATIONS		DIGI XBEE RR	DIGI XBEE RR PRO
ZIGBEE PERFORMANCE			
TRANSCEIVER CHIPSET	Silicon Labs EFR32MG SoC		
DATA RATE	RF 250 Kbps, serial up to 1 Mbps		
INDOOR/URBAN RANGE*	Up to 60 m (200 ft)	Up to 90 m (300 ft)	
OUTDOOR/RF LINE-OF-SIGHT RANGE*	Up to 1200 m (4000 ft)	Up to 3200 m (2 miles)	
TRANSMIT POWER	6.3 mW (+8 dBm); channel 26 max power: +3 dBm	79 mW (+19 dBm); channel 26 max power: +3 dBm	
RECEIVER SENSITIVITY (1% PER)	-103 dBm normal mode		
BLUETOOTH® PERFORMANCE			
TRANSCEIVER CHIPSET	Silicon Labs EFR32MG SoC		
BLE VERSION	Supports Bluetooth Low Energy (BLE) 4.2 (slave only) and capable of interoperating with BLE 5.0 devices that support 1M PHY. Hardware is software upgradable to 5.0, but not yet enabled except payload extensions (future release).		
MAXIMUM DATA RATE	1 Mbps		
INDOOR/URBAN RANGE*	Up to 15 m (49 ft)		
OUTDOOR/RF LINE-OF-SIGHT RANGE*	Up to 300 m (984 ft)		
TRANSMIT POWER	+8 dBm		
RECEIVER SENSITIVITY (1% PER)	-95 dBm normal mode		
FEATURES			
SERIAL DATA INTERFACE	UART, SPI		
CONFIGURATION METHOD	API or AT commands, local or over-the-air (OTA)		
FREQUENCY BAND	ISM 2.4 GHz		
FORM FACTOR	Micro, through-hole, surface mount		
INTERFERENCE IMMUNITY	DSSS (Direct Sequence Spread Spectrum)		
ADC INPUTS	(4) 10-bit ADC inputs		
DIGITAL I/O	13		
ANTENNA OPTIONS	Through-hole: PCB antenna, U.FL connector, RPSMA connector SMT: RF pad, PCB antenna, or U.FL connector Micro: U.FL antenna, RF pad, chip antenna		
OPERATING TEMPERATURE	−40 °C to 85 °C (−40 °F to 185 °F)		
DIMENSIONS (L X W X H)	Through-hole: 2.438 x 2.761 cm (0.960 x 1.087 in) SMT: 2.199 x 3.4 x 0.305 cm (0.866 x 1.33 x 0.120 in) Micro: 13 x 19 x 2 mm (0.533 x 0.76 x 0.087 in)		
MEMORY	1 MB / 96 kB RAM		
NETWORKING AND SECURITY			
PROTOCOL	Zigbee 3.0		
ENCRYPTION	128/256 bit AES		
RELIABLE PACKET DELIVERY	Retries/acknowledgements		
IDS	PAN ID and addresses, cluster IDs and endpoints (optional)		
CHANNELS	16 channels		

*Range figure estimates are based on free-air terrain with limited sources of interference. Actual range will vary based on transmitting power, orientation of transmitter and receiver, height of transmitting antenna, height of receiving antenna, weather conditions, interference sources in the area, and terrain between receiver and transmitter, including indoor and outdoor structures such as walls, trees, buildings, hills, and mountains.

SPECIFICATIONS

DIGI XBEE RR

DIGI XBEE RR PRO

POWER REQUIREMENTS

SUPPLY VOLTAGE	1.71 to 3.8 V	
TRANSMIT CURRENT	32 mA at 3.3 V, +8 dBm	193 mA at 3.3 V, +19 dBm
RECEIVE CURRENT	14 mA	
SLEEP CURRENT	8 μ A at 25 °C (77 °F)	

REGULATORY APPROVALS

FCC, IC (NORTH AMERICA)	Yes	Yes
ETSI (EUROPE)	Yes	No

DIGI XBEE TOOLS

The **Digi XBee Ecosystem** is fully supported with the award-winning **Digi XBee Tools** suite. Designed to support the full product lifecycle, from prototyping and development to deployment and ongoing monitoring, Digi XBee Tools include code libraries, testing and prototyping tools, product development and manufacturing support, and tools for deploying and managing end devices in the field.



DEVELOP



BUILD



DEPLOY



MANAGE

DIGI WIRELESS DESIGN SERVICES



DEFINITION



DEVELOPMENT



CERTIFICATION



MANUFACTURING

GET TO MARKET FASTER WITH DIGI WDS

Digi Wireless Design Services (WDS) has over a 15-year history of helping clients speed down the path to success by guiding them around the technological and regulatory certification pitfalls that botch budgets and disrupt product introductions.

We begin by actively listening to your business and technical requirements, and then leverage our proven methodology, world-class engineering expertise and library of IP to design a cost-effective solution that is tailored to your specific needs.

Accelerate toward the solution that is right for you and your customers. Contact **Digi WDS** to find out how we can guide you to success.

DIGI WDS SERVICES

We offer services to support you wherever you are along your development path:

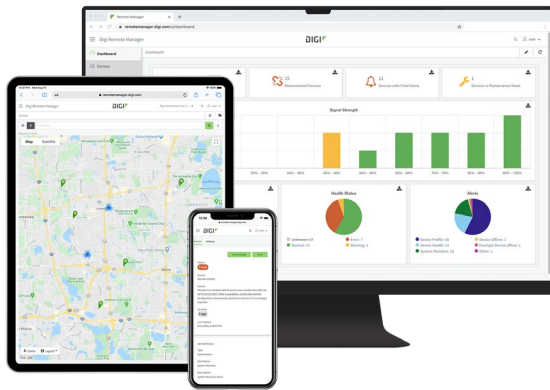
- Proof of concept
- Architecture consultation
- Requirements definition
- System, software and electrical design
- Design reviews
- Certifications
- Prototype build
- Manufacturing test fixtures

DIGI WDS RECORD

Our record speaks for itself.

- 250+ product development projects
- 100+ certification failure rescues
- 100 million connected devices around the globe

DIGI REMOTE MANAGER



Digi Remote Manager® is the technology platform that brings networks to the next level, allowing networks — and the people who manage them — to work smarter. With Digi Remote Manager you can transform a multitude of dispersed IoT devices into a dynamic, intelligent network. Now you can easily deploy, monitor and diagnose thousands of mission-critical devices from a single point of command — on your desktop, tablet or phone. All the while, its software-defined security diligently safeguards your entire Digi ecosystem.

Learn more at www.digi.com/digi-remote-manager.

CAPABILITIES

- Activate, monitor and diagnose your mission-critical devices from a single point of command and control
- Schedule key operations — including firmware updates and file management — on a single device or on a group of devices, keeping your network functionality up-to-date and maintaining compliance standards
- Manage edge devices out-of-band via console terminal access
- Keep tabs on device health and connectivity across device deployments of any size
- Create detailed reports and enable real-time alerts for specified conditions
- Integrate device data through open APIs to gain deeper insights and control with third-party applications
- Report and alert on performance statistics, including connection history, signal quality, latency, data usage and packet loss

INFRASTRUCTURE

- Hosted in a commercial-grade cloud server environment that meets SOC 1®, SOC 2® and SOC 3® standards
- Superior availability, operating to 99.9% or greater
- Open APIs available to support application development

SECURITY

- Comprehensive security controls in place to protect your data
- Member of the Center for Internet Security® (CIS®)
- Enables compliance with security frameworks like ISO27002, HIPAA, NIST and more
- Earned Skyhigh's CloudTrust™ Program highest rating of Enterprise-Ready

DIGI IX15 IOT GATEWAY AND CELLULAR ROUTER



The versatile Digi IX15 device functions as both gateway and router for customers seeking lower-cost, quicker-to-market alternatives to chip-down DIY designs for networking operations. Digi IX15 is an industrial-grade IoT gateway that connects Digi XBee modules to cloud applications over cellular or Ethernet, providing the easiest path to Internet connectivity for the Digi XBee ecosystem of hardware, software, services and award-winning tools.

Learn more at www.digi.com/ix15.

DIGI XBEE RR AND THE DIGI IX15 IOT GATEWAY

- Connect Digi XBee RR with the Digi IX15 IoT gateway and cellular router
- Configure, monitor and control your entire Digi XBee RR wireless network with Digi Remote Manager — your central, cloud-based platform for easy setup, mass configuration, firmware updates, remote device management and out-of-band management — via the Digi IX15 IoT gateway and cellular router
- Provide the most optimal, resilient connectivity between your XBee network and cloud-based applications

FEATURES AND BENEFITS

- Digi XBee (Zigbee, DigiMesh, 802.15.4), BLE and RS-232/485 for connection to local devices
- Open source Python environment for custom application development
- LTE Cat 4 cellular and 10/100 Ethernet WAN connectivity
- Full-featured industrial cellular routing platform
- Redundant connectivity with dual SIMs and Digi SureLink®
- Built-in Digi TrustFence for device security, device identity and data privacy

DIGI SERVICE AND SUPPORT / You can purchase with confidence knowing that Digi is always available to serve you with expert technical support and our industry leading warranty. For detailed information visit www.digi.com/support.

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DIGI INTERNATIONAL WORLDWIDE HQ
877-912-3444 / 952-912-3444 / www.digi.com

DIGI INTERNATIONAL JAPAN
+81-3-5428-0261 / www.digi-intl.co.jp

DIGI INTERNATIONAL GERMANY
+49-89-540-428-0

DIGI INTERNATIONAL SINGAPORE
+65-6213-5380

DIGI INTERNATIONAL CHINA
+86-21-50492199 / www.digi.com.cn